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United States
Department of
Agriculture

Food Safety
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Service

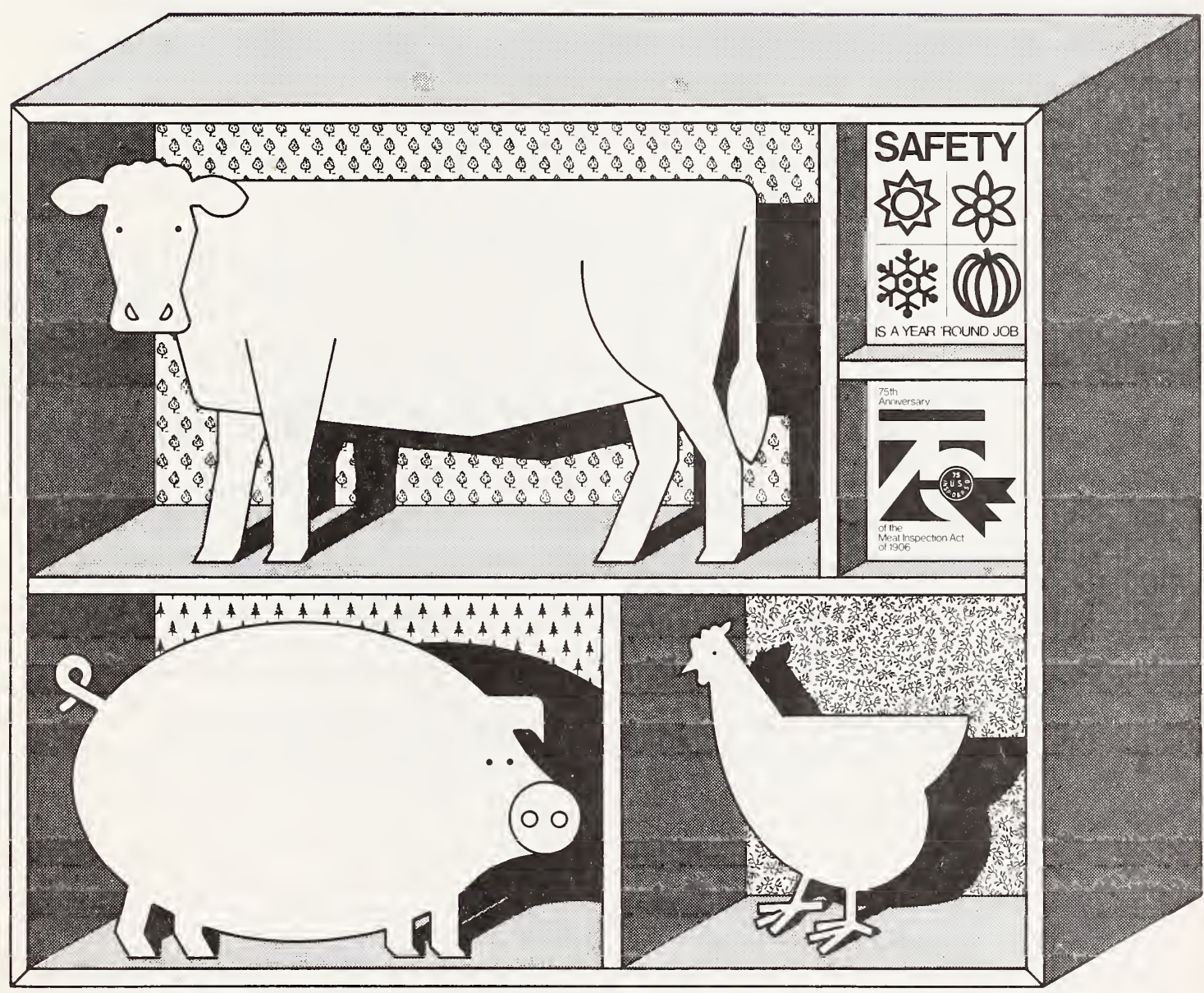
Meat and Poultry
Inspection
Program

February 1982

Issuances of the Meat and Poultry Inspection Program

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UNITED STATES DEPARTMENT OF AGRICULTURE
Food Safety and Inspection Service
Meat and Poultry Inspection
Washington, D.C. 20250

Meat and Poultry Inspection Manual

Date: FEBRUARY 1982

Change Number: 82-2

MAINTENANCE INSTRUCTIONS

| Remove Page | Insert Page | Numbered |
|----------------|----------------|----------|
| 37 through 40b | 37 through 40d | 82-2 |
| 137 and 138 | 137 and 138 | 82-2 |
| 142a and 142b | 142a and 142b | 82-2 |

Pen-and-Ink Changes

1. Page 96, section 11.14(j)(2)2, line 8, change the word "reject" to "accept".
2. Page 211, Chart 20.1, delete MP Form 215.
3. Page 246, section 22.32, paragraph 3, add the following sentence:
"Livers must arrive in Egypt within 60 days from date of slaughter."
4. Page 261n, section 22.63(a)(5), paragraph 4, line 25, add the following after the word "dodecylgallate,": "and/or BHT and/or BHA".
5. Page 261o, section 22.63(b)(1), line 4, add the following sentence after the word "requirements." "Plants certified for slaughter/cut-up to FRG and/or UK are considered as meeting EEC requirements."
6. Page 261z, section 22.86 b, change to read as follows:

b. The preparation and freezing of the product described herein has been accomplished under conditions acceptable to USDA.

If product contamination occurs as result of bag breakage, product must be rewashed immediately by spraying. All traces of refrigerant must be removed before product is passed for food. If all contamination cannot be removed by washing or trimming, affected portion must be condemned.

8.43 DRY ICE

When product is stored or shipped, dry ice (solid carbon dioxide) may be applied directly to it, used as an adjunct to, or as a substitute for refrigeration.

Precautions. High levels of carbon dioxide are harmful and may produce unconsciousness.

To assure that dry ice does not constitute a safety hazard, management must:

1. Provide dry ice dispensers (snowing hoods) with mechanical ventilation to eliminate accumulated gas. To be effective, exhaust intakes should be near floor level.

2. As a warning, identify rooms or areas where dry ice or product with dry ice is stored.

3. Monitor processing rooms where dry ice is used to assure that carbon dioxide does not exceed the time weighted value .5 percent (5,000 ppm) maximum level set by the Occupational Safety and Health Administration. This limit does not apply to coolers, freezers, or storage rooms. Measurements should be taken about 5 feet above floor level.

INSECT AND RODENT CONTROL

Subpart 8-G

(Regs: M-318; P-Subpart H)

8.46 PEST MANAGEMENT

Pests may transmit diseases to humans through food contamination. Thus their presence in or around meat and poultry plants creates a public health hazard. To the fullest practicable extent, their breeding, harborage, and entrance into plants should be prevented. Prompt and effective measures are required to eliminate pests which do gain entrance to official establishments. In order to maintain preventive control measures, the inspector in charge (IIC) must require sound sanitation, construction, maintenance, and pest exclusion programs, that are supplemented with careful application of approved pesticides.

(a) Sanitation and Housekeeping

Potential harborage and/or attractants of insects or rodents such as accumulations of hog hair, feathers, debris, manure, paunch contents, old clothing, cluttered storage areas, and unused or discarded equipment and materials are prohibited.

(b) Local Cooperation

Plant management should solicit cooperation from adjoining property owners and from local health authorities to eliminate breeding or hiding places on adjacent property and to develop an insect and rodent control program.

* (c) **Structural Deficiencies and Building Maintenance.**

* Buildings and equipment harboring pests shall be repaired or replaced. Floors, walls, partitions, and ceilings must be of USDA approved tight-fitting material which does not permit entrance and breeding places for cockroaches or other pests.

* Broken areas and cracks in walls or separations at adjoining surfaces, such as floorwall junctions, shall be sealed with approved material within a period of time agreed upon by plant management and the IIC. The IIC may include major projects in a planned improvement program.

* Areas tunneled by rodents must be sealed with concrete, brick, or other approved rodent-proof material. Floor drain strainers must be effective and kept in place to prevent rodent entrance through drainage lines. All openings should be screened, made to fit tightly or otherwise protected to prevent entrance of flies, rodents, birds, etc.

* **8.47 PESTICIDES, GENERAL**

* See the "List of Chemical Compounds" for USDA approved materials and their uses. **WARNING!** Fumigants, many insecticides, and rodenticides are toxic. If inhaled, ingested, or absorbed through the skin they may cause serious illness.

* **(a) Use**

* The Federal Insecticide, Fungicide, and Rodenticide Act, which is administered by the Office of Pesticide Programs, Environmental Protection Agency (EPA), requires that all pesticides (including fumigants, avicides, insecticides, and rodenticides) be registered and that they be used only for intended purpose according to EPA regulations and EPA registered labels and supplementary labeling instructions. States also regulate users of pesticides through licensing and certi-

fication programs. Pesticides which have restricted uses may be used by certified applicators or under their direct supervision. It is illegal to use or recommend the use of any pesticide in a manner inconsistent with its labeling and EPA regulations. Use of pesticides in official establishments is subject to review by the IIC.

* **(b) Responsible Person**

* Residual pesticides which may not be purchased by the general public (EPA restricted use pesticides) may be prepared, mixed, and used only by or under the supervision of a certified applicator. Such persons must comply with State and EPA requirements and USDA guidelines for the use of pesticides. All other pesticides (EPA general use pesticides) may be prepared, mixed, and used by any representative of the official establishment or its pest control company.

* **(c) Storage**

* If the pesticides are stored on the premises, they must be kept in closed containers, separate from other material in an area acceptable to the IIC, and under the control of a responsible plant employee.

* **(d) Pest Control Program**

* The primary responsibility of pest control programming lies with the owner/operator of the official establishment. The IIC will review a proposed program that includes product labels before implementation, and periodically thereafter. Deviations from the accepted program may be allowed only with the concurrence of the IIC. Plant management will provide the IIC with a report listing the materials used and the areas treated after each application.

* 8.48 INSECTICIDES

* (a) Residual Insecticides

* These provide control of pests
* for several hours or longer after
* application. Insecticides that may
* be used are those which are labeled
* for use in food establishments and
* which contain active ingredients
* such as: Baygon, bendiocarb
* (Ficam), carbaryl (Sevin), chloro-
* pyrifos (Dursban), diazinon,
* dichlorvos (DDVP, Vapona), dimethoate
* (Cygon), Dipterex, fenthion (Entex),
* lindane, malathion, methoxychlor,
* ronnel.
* Products containing these ingredients
* must appear in the "List of Chemical
* Compounds."

* The official establishment must
* strive to avoid chemical dependence
* by establishing effective sanitation
* and maintenance programs coupled
* with programs to prevent reinfesta-
* tion. Insects, their larvae, and
* their eggs in incoming supplies
* should be destroyed by fumigation
* or other effective means before they
* enter the establishment or in
* isolated storage areas after enter-
* ing the establishment. Residual
* insecticides may be appropriate to
* kill insects that succeed in enter-
* ing or to combat established
* populations.

* Plant management must inform the
* IIC of the treatment schedule. The IIC
* will determine the necessary degree of
* monitoring or observation. The need for
* the presence of an inspector during the
* chemical application may be minimized if
* experience has demonstrated the relia-
* bility of plant management and the
* insecticide applicator. When treatment
* is permitted in the absence of an
* inspector, the IIC may require the plant
* to identify the proposed treatment sites
* in advance to permit review during an
* inspector's normal tour of duty. The
* ICC may also permit the recording of
* the sites at the time of treatment for

later review by the inspector. Sites
should be reviewed to determine if
chemicals are placed in appropriate
sites; adequate followup maintenance
is completed; and if chemicals are
being used as a substitute for effec-
tive sanitation, maintenance, and
reinfestation prevention programs.

* (1) Permitted methods of application.

Residual insecticides
are commonly applied as liquid
sprays in the form of emulsions,
wetttable powders, or solutions.
Under special conditions, they may
be applied as baits, powders, or
pellets (see section 8.48(c)).
General or spot treatment applied
through a fan spray nozzle and under
low pressure (to avoid splash or
spray mist) is useful on exterior
surfaces of buildings and in inedible
product areas and in certain non-
processing areas. Crack and crevice
treatment which is allowed in all
areas is a more restrictive method
of use. It is defined by EPA as
"application of small amounts of
insecticides into cracks and crevices
in which insects may hide and through
which they may enter the building".

* (2) Permitted conditions of use.

EPA registered labels provide direc-
tions for the use of pesticides in
food areas and nonfood areas of
food establishments. The following
categories further define and limit
the use of pesticides to prevent
inadvertent transfer to edible prod-
uct areas. Any use of a pesticide
in an official establishment must
first conform to the prerequisites
described in section 8.46.

(i) Outside premises. Use is per-
mitted according to EPA registered
labels. Precautions must be taken
to prevent airborne insecticide or

* affected insects from entering edible
* product processing or storage areas
* through open doors, windows, service
* entries, ventilating systems, etc.

* (ii) Inedible product areas. Use is
* permitted in condemned or inedible
* product areas such as storage rooms,
* docks, rendering rooms, and similar
* inedible areas according to methods
* on EPA registered labels for nonfood
* areas in food establishments.

* (iii) Nonprocessing areas. Use
* is permitted according to methods
* on EPA registered labels in areas
* such as tool and machinery rooms,
* pump rooms, boiler rooms, and
* elevator shafts or pits. Insecti-
* cide applications are not permitted
* that may result in transfer to
* employees, their work clothing, or
* the other materials and objects
* that may contact product. Therefore,
* residual insecticide applications in
* nonprocessing areas such as
* inspector's offices, locker rooms,
* wash rooms, halls, stairwells,
* foreman's office, restrooms, and
* lunchrooms or cafeterias, that are
* frequently used by employees whose
* primary duties are in edible food
* areas, are normally limited to crack
* and crevice treatment. Spot applica-
* tions may be considered if they
* are detailed in a pest control pro-
* gram that is submitted to the IIC.
* The IIC will evaluate the program,
* and attach comments and other
* pertinent information before forward-
* ing it through channels to the
* Facilities, Equipment and Sanita-
* tion Division (FESD) for approval.

* (iv) Edible product areas. Use
* of residual insecticide in edible
* product areas, including areas where
* exposed edible product, its equip-
* ment, or its containers are stored
* is limited to crack and crevice
* treatment as a supplement to the
* prerequisites in section 8.46 and
* in accordance with EPA label
* directions.

1. They are not to be used for space
treatment such as misting or fogging,
for surface treatment such as floor-
wall junctions in rooms where their
use is restricted to crack and
crevice treatment, or on surfaces
contacted by personnel, equipment
or clothing that may result in
secondary transfer to product.

2. Production operations are not to
be conducted in the area at time of
treatment. All exposed edible prod-
uct and its packaging materials are to
be removed, tightly covered, or stored
in closed containers.

3. Broken areas such as cracks
in walls or separations at adjoining
surfaces (for example floor-wall
junctions) should be large enough
to permit deep delivery of the insecti-
cide into the insects' nesting sites
while minimizing surface contamina-
tion. Openings may also be made in
internal hollow walls to permit
treatment of the insects' nesting
sites. Walls that show evidence of
water seepage should not be treated
internally until all such seepage is
corrected. Residual insecticides
may be used inside electrical panels,
light switches, motor housing, and
similar areas in which insects cannot
otherwise be effectively controlled.
The IIC will refer questionable or
unusual proposed treatment site
requests through channels for
evaluation by FESD.

4. After treatment, areas should
be ventilated to remove insecticide
odors, and the facilities and equip-
ment thoroughly washed with an accepta-
ble detergent solution and rinsed with
potable water to remove contamination.
A slight odor near a treated crack or
crevice is generally not
objectionable.

5. The treated cracks and crevices
are sealed with appropriate material
within a period of time after treat-
ment agreed upon by plant management

* and the IIC. The IIC may include
* major projects in a "Planned Improve-
* ment Program."

* 6. If adherence to all of the above
* provisions does not result in elimina-
* tion of the insect infestation, the
* inspector in charge may permit
* repeat treatments under the same
* provisions. However, the inspector
* must continue to require sound construc-
* tion, sanitation, maintenance, and
* reinfestation prevention programs
* to avoid hazards related to chemical
* use.

* 7. Requests by plant management
* for residual insecticide treatment
* programs not covered by this section
* must be submitted through the
* inspector in charge to FESD.

* **(b) Contact Insecticides (nonresidual
* or knockdown) - Sprays, Aerosols**

* (1) Contact insecticides have
* shortlived effectiveness and are used
* to kill insects on contact or to
* flush them from hiding places. They
* may be used in **nonprocessing** and
* **inedible** areas in accordance with the
* EPA registered label. The permitted
* methods of application in nonprocessing
* and inedible areas include:

* a. Pressurized containers pro-
* ducing coarse wet spray or delivery
* of spray through a tube which is
* inserted into cracks and crevices.

* b. Compressed air (pump) sprayers
* which deliver a coarse wet spray or
* delivery through a tube inserted
* into cracks and crevices.

* c. Ultra Low Volume (ULV) machines
* that dispense aerosol mist into
* general spaces and accessible voids.

* d. Pressurized containers which
* may be hand held or mounted for
* timed actuation to release aerosol
* mist into general space.

* e. Timed, automatic devices which
* dispense an aerosol mist at regular
* intervals throughout a 24-hour period

according to EPA registered label
direction.

(2) Contact insecticides may be
used in edible product areas in
accordance with the EPA registered
label. However, since their effects
can be extended for a short period
of time depending on the concentra-
tion of active ingredients and/or the
amount of chemical applied, they are
further restricted (see section
8.48(b), 3, a and b). These
"nonresidual" or "knockdown" insecti-
cides kill insects only on direct
contact at the time of application.
They may be used in edible product
areas, provided exposed edible prod-
ucts and their packaging materials
are removed, tightly covered, or
stored in closed containers before
spraying. Facilities and equipment
must be thoroughly washed with an
effective cleaning compound and rinsed
with potable water after spraying.

(3) The following nonresidual
insecticides may be used according
to the directions on the EPA
registered label: allethrins,
lethanes, pyrethrins, pyrethrum
extract, synthetic pyrethrins
(SBP-1382 Synthrin, NIA 17370).
Products containing these ingredi-
ents must appear in the "List
of Chemical Compounds."

a. Concentrations of 1 percent
or less, alone or in combination,
of the following synergists may be
used with the above insecticides:
piperonyl butoxide, piperonal bis
(2-butoxyethoxy) ethyl acetal
(Tropital), N-octyl bicycloheptene
dicarboximide (MGK 264), n-propyl
isome, sulfoxide.

b. Synergist concentrations up to
a maximum of 5 percent are accepta-
ble when the insecticide is dispensed
as an aerosol spray.

* 4. The permitted methods of appli-
* cation in edible areas include:

* a. Space spraying which is the
* dispersal of insecticides into the
* air by foggers, misters, aerosol
* devices, or vapor dispensers to
* control flying insects and exposed
* crawling insects.

* b. Contact spraying which is the
* application of a wet spray to hit
* or wet the individual insect with
* the spray mist.

* c. Timed, automatic devices which
* dispense an aerosol mist at regular
* intervals. They may be operated in
* edible product processing or storage
* areas only when food products are not
* being processed or stored in open
* containers. The use of nonresidual
* insecticides on an intermittent basis
* (less than 24-hours a day) may signi-
* ficantly affect the efficacy of the
* insecticides. Since they may not
* be operated during production hours,
* the registered label for nonresidual
* insecticides proposed for automatic
* dispensing in edible product areas
* must include direction for less
* than 24-hour operations to sub-
* stantiate their efficacy under those
* conditions.

* (c) Baits, Pellets, Powders

* In livestock pens, poultry receiving
* areas, and other similar areas, EPA
* registered and USDA approved residual
* baits, powders, or granular materials
* may be used to control insect pests.
* Except for baits in labeled dispenser
* containers, such products must be of
* distinct blue or green color. Care
* must be taken that baits are not
* ingested by livestock or poultry.

* (d) Repellants

* Compounds with di-n-butyl succinate
* are effective repellants and can be
* used for exterior door and window
* facings, near loading docks, and
* outside areas.

(e) Fumigants

(1) Non-proprietary. Fumigation
with hydrocyanic acid, methyl bromide,
or phospine (from aluminum phosphide)
gases is sometimes necessary for
eradication of vermin or insects.
Since these gases are extremely
poisonous, they must appear in
the "List of Chemical Compounds,"
and be used according to label
instructions with the approval of
the IIC. All labels must be
registered by EPA. An experienced,
certified fumigator must be placed
in charge of operations.

(i) Fumigation of Premises. All
edible products and their packaging
materials must be removed from rooms
before fumigation, with the following
exceptions.

1. Packaged products. 2. Infested,
uncooked cured hams, uncooked cured
bacon, and cooked sausage that are
fumigated to destroy an infestation,
such as ham beetles, before they are
moved to inedible areas.

(ii) Fumigation of Product. When
fumigation is used to eradicate
mites, skippers, beetles, and
similar insects from infested cured
hams or similarly cured products,
the infested meat must be condemned
and removed after such treatment.
Uninfested meat or product must be
aerated for at least 48 hours before
packaging or further processing.
Food contact surfaces must be rinsed
thoroughly with potable water before
processing is resumed.

(2) Proprietary Fumigants. When
compounds are prepared from one or
more chemicals and their combination
results in a gas, they are referred
to as "proprietary" fumigants. Such
fumigants must appear in the "List
of Chemical Compounds" and be used
according to label instructions with
the approval of the IIC. Their

* labels must be registered with EPA
 * and must include directions for use
 * in meat and poultry plants. Pro-
 * prietary fumigants may not be used
 * on meat and poultry products. All
 * edible meat and poultry products and
 * their packaging materials must be
 * removed from rooms to be fumigated.
 * Food contact surfaces must be rinsed
 * with potable water before product is
 * returned.

* **(3) Room Ventilation Test.** After
 * fumigation, the treated space must
 * be adequately ventilated. An
 * experienced certified fumigator
 * must test the room and all other
 * contiguous spaces within the struc-
 * ture for safety to ensure the gas
 * has been removed from the room,
 * product surfaces, and equipment.

* **(f) Outdoor Pest Control Compounds**

* Compounds labeled for outdoor use
 * only (such as herbicides, bird con-
 * trol compounds, and other pest con-
 * trol substances) may be used around
 * the outside of the premises of
 * federally inspected plants without
 * evaluation or authorization by USDA,
 * provided they are registered with
 * EPA. They are to be used in accord-
 * ance with label directions and in a
 * manner which prevents the direct or
 * indirect contamination of food
 * products.

8.49 RODENTICIDES

Use of rodenticides is a means of eliminating rodents. Other methods--rodent proofing of buildings, destruction of rodent harborages, maintenance of rodent-free zone around plants--should be used to prevent rodent entrance into buildings.

(a) Approved Rodenticides

The following rodenticides may be used: 3-(alpha-Acetonylfurfuryl)-4-hydroxycoumarin (Fumarin) and its sodium salt (Fumasol), Alpha-Naphthylthiourea (ANTU), 2-[(p-Chlorophenyl)phenylacetyl]-1, 3-indandione (Chloro-

phacinone, Rozol), Diphacinone (Diphacin) and its sodium salt, 2-Isovaleryl-1, 3-indandione (PMP, Valone), 2-Pivalyl-1, 3-indandione (Pival) and its sodium salt (Pivalyn), Prolin, Red squill, Warfarin (3-alpha-Acetonylbenzyl)-4-hydroxycoumarin] and its sodium salt.

In general, rodenticides may not be placed in edible product departments until operations have ceased for the day and all uncovered products are removed from the area. Strict account must be kept of the location and number of stations in the area and the floor plan layout must be approved by the inspector in charge. Rodenticides may not be placed in dry salt cellars. They may remain in areas containing sealed, packaged meats, but care must be taken to place them so as to prevent contamination of the meat.

All labels must be registered with the Office of Pesticide Programs, Environmental Protection Agency.

(b) Rodent Baits

Bait boxes and fountains, tracking powders, and other rodenticides must be removed from edible product departments before operations are resumed. All bait supplies must be stored in a separate place designated by the inspector in charge.

(1) Dry baits. Cereal, or other vegetable meals or flours may be mixed with one or more approved rodenticides, provided that they are first mixed with a green or blue dye.

Whole or cracked grains, or flours or meals pressed into cakes or pellets that do not have characteristics of food products, may be used without the green or blue dye. To help the rodenticide to adhere to whole or cracked grain, two ounces of melted animal or vegetable oil may be mixed with each five pounds of grain.

(2) Liquid baits. If prepared according to label directions, liquid

baits may be used in bait fountains, provided the solution has a distinct green color.

(3) Bait fountain. It must be similar to bottle-type containers used in poultry houses. Each fountain must be marked "rodent bait" and placed in a bait box.

(4) Bait box. It must be marked "rodent bait" and have a serial number and firm's or responsible individual's name. Each box must have sides, top and bottom closed, or capable of being closed or fastened, with openings only for rodent entrance and exit.

(5) Tracking powder. It may be used in all departments, provided it has a distinct blue or green color, processing operations have ceased, all exposed products have been removed, and its use does not create a nuisance. After the powder is removed, floors must be washed with an effective cleaning compound and/or rinsed with potable water to remove all evidence of the tracking powder before operations are resumed.

(6) Sticky boards. Board strips with extremely adhesive resinous material can be used to capture rodents. Since the adhesive does not contain rodenticide, board strips may be used in all departments provided their use does not create a nuisance.

8.50 RODENT EVIDENCE

When pests enter an establishment, certain eradication methods and chemicals may be used.

(a) Ultraviolet Light

"Black Lights" or ultraviolet lights may be used to determine evidence and possible sources of product contamination.

Such lights cause rodent urine stains to fluoresce. However, certain substances--sodium and potassium salts,

cleaning agents, etc.,--also fluoresce. Thus, fluorescence under ultraviolet light and without other evidence of rodent infestation is not sufficient.

(b) Immediate Action

(1) Suspension of operations. When rodent evidence is discovered in production or production-related area--processing room, ingredient storage area, cooler, or any area where meat or poultry product is accessible--the inspector shall stop operations and movement of any material into or out of the area, and shall require management to:

1. Examine all products, packaging materials, and containers for rodent damage or contamination.

2. Destroy or decharacterize rodent damaged or contaminated product, carcass, parts, packaging materials and containers, and any open dry ingredient container.

3. Remove accumulations of equipment, paper, or other debris providing harborage in involved area, and wash and sanitize all equipment.

4. Survey premises and outside areas; eliminate all suspected harborages (outside premises, maintenance areas, etc); close all possible rodent access points, and arrange all dry storage material to facilitate cleaning.

(2) Resumption of operations. The inspector may allow operations to resume after all actions are successfully completed.

8.51 CONTROL PROGRAM

(a) Minimum Requirements

An effective rodent control program includes:

1. Written designation and authorization of a qualified individual to assume responsibility for the program.

2. Sealing all openings or holes serving as possible entrance points.

3. Elimination of any harborage inside or outside the plant.

(2) **Soy Product.** The inspector must assure that they are properly used. Approval of soy flour, soy protein concentrate, and isolated soy protein as ingredients of sausage is based upon their binding properties. These substances are also permitted as ingredients of other meat food products--chili, stew, loaves (other than meat loaves), soups, etc.

Soy products with appearance of diced, flaked, or ground meat, even though labeled as "soy flour," "isolated soy protein," and "soy protein concentrate" should not be used in meat food product unless specifically approved by MPSL. This Staff will approve labels for emulsified cooked sausages containing textured or structured soy flour, isolated soy protein, and soy protein concentrate, provided the textured or structured products are finely divided as a part of the emulsifying process. When so used, the labeling declaration of the soy products should not show the words "textured" or "structured."

In all cases, soy products must be identified by their common or usual name in the ingredients statement and/or by byproduct name, as required by regulations or label approval. Soy bean derivatives for which the category or protein content is questionable should be submitted to the laboratory. Soy protein concentrate, soy flour, and isolated soy protein are practically indistinguishable by visual examination. They may also closely resemble sodium caseinate, nonfat dry milk, and certain cereals. Therefore, if a plant stocks more than one type of soy product, additional controls are required. These include developing, with the plant, a procedure for confining soy products for positive identification and maintaining daily records showing amounts of soy bean derivative used and type of product prepared.

(b) Formula Control

Approved label formulas must be

controlled at plant level. Since all products cannot be verified by laboratory analysis, the inspector should check the weight, calculate the percentage of ingredients, and assure that product is properly formulated.

The inspector should also check plant records of ingredients and assure that amounts used correspond to product produced.

(c) Confidential Formula

Ingredients with confidential formulas (spice mixtures, seasonings, etc.) may be used in products, provided they are specifically identified in the label approval. Confidential formulas are reviewed for acceptability, and label's ingredient statement verified for accuracy. The inspector's responsibility limits use of such materials to identified brands in specified amounts. Substitutions are not permitted without approval.

Exception! Certain materials--mayonnaise, ketchup, bakery products, cheese, margarine, etc.--have an official standard of identity (or composition) registered with FDA. When used in products, a confidential formula for each is unnecessary for label approval. Different brand name products may be interchanged without MPSL clearance. However, substituted product must carry the same product name--mayonnaise, ketchup, etc.

(d) Material Rejection

Nonfood ingredients rejected for use may be removed from the plant or destroyed at the plant. If removed, FDA and local health authorities should be notified.

SAUSAGE (MEAT)

Subpart 18-E

(Regs: M-318, 319)

18.23 FRESH PORK SAUSAGE

Sampling, Compliance

When surveillance is limited, submit occasional samples to laboratory. Take corrective action when percent water in sample exceeds limits in Table 18.1A.

Table 18.1-A -- Percent of Allowable Water ^{1/}

| Product Formula | Maximum Individual Sample Result | Maximum of three Consecutive results |
|-----------------|----------------------------------|--------------------------------------|
| Water | 5 | 3 |
| No Water | 2 | 0 |

^{1/} Allowances for water are because of analytical variations and the method of calculating added water in sausage.

If product is suspected of excess added water, submit two samples from different parts of the lot. Retain if the average is: Four percent or more if water is declared; or 1 percent or more if no water is declared.

18.24 COOKED SAUSAGE

This section covers cooked sausages subject to fat and/or added water limitations.

(a) Casings

(1) Vinegar, lactic or citric acid.

Their solutions may be used for acidification purposes. To improve peeling,

- * the establishment may soak casings or
- * spray cooked sausage before and/or
- * after cooking, using any one of the
- * following solutions; up to 4% citric
- * acid; or up to 7% lactic acid; or up
- * to 4% acetic acid (40 grain vinegar).

These solutions may be recirculated during the day's operation if they are effectively filtered and are

- * clear. Solutions must be discarded
- * daily. The equipment must be of approved plastic or stainless steel.

Spray heads, filters, and pumps must be capable of being dismantled for cleaning.

(2) Unapproved Substances. Animal casings (318.6(b)(2)) preflushed and packed in solutions containing unapproved substances--antibiotics, antioxidants, preservatives, nitrite, nitrate, etc.--are not permitted. When noncompliance is suspected, the inspector should submit samples of casings and solutions to the laboratory.

(3) Approved dyes. Artificial casings impregnated with soluble approved dyes may be used for small sausage varieties (318.7(c)(3)). The certification required for coal tar dyes (318.7(c)(4)) should be furnished with each lot of such dye-impregnated casings.

(4) Color penetration. Examine artificially colored product. If, within 72 hours after stuffing, product shows color penetration, retain for appropriate disposition. Do not ask laboratory to examine product for color penetration.

(5) Rework. This term applies to a fully or partially processed product (not including uncooked trimmings) rerouted for reasons other than unwholesomeness or adulteration (i.e., emulsion residue, product breakage, slicing operations, smoked meats, returns, etc.) and intended for inclusion in cooked sausages, loaves, and similar products. Rework may be used provided it does not adulterate the product, violate its standard of composition, upset the order of predominance of ingredients, or perceptively affect the normal characteristics of the product, and is subject to the following restrictions:

a. Cooked sausage, meat loaves, may be used in similar products

production has been sampled. From these samples randomly select one verification sample (three 1-pound units) for submission to MPI laboratory. The inspector may bias the sample selection by selecting the sample from a suspect lot of production. The remaining samples are to be returned to the plant unmarked so that lot is not identified.

Option 2. When requested by the establishment, sampling may be conducted to provide both MPI verification samples to MPI laboratories and companion samples to the plant certified laboratory. The inspector shall sample as in (1) above except collect duplicate samples daily (two 1-pound samples each time for a total of six). Both sets of three 1-pound samples are to be numbered with a three digit sample number starting with 101. When 999 is reached start again at 101. One of the dual samples (three 1-pound) is given to the plant certified laboratory daily. For the selection of verification sample(s) to submit to MPI laboratories, follow instruction in Option 1 above. Complete Block 13 of the MP Form 22 by stating "Verification and companion sample to certified laboratory, sample number ____." MPI laboratory verification results will be returned to the inspector on MP Form 22. The results will be used only as a verification check upon the process control of an approved quality control procedure. The inspector should not conduct a comparison check of certified laboratory's analytical capability.

18.25 DRY, SEMIDRY SAUSAGE

(a) Mineral oil

To prevent mold growth, mineral oil may be used on casing exterior after curing and drying as prescribed by regulations (Part 318).

* (b) Casings

* To facilitate peeling, casings
* intended to be removed from dry or
* semidry sausage at the producing
establishment may be soaked in any

one of the following solutions: up to 4% citric acid; or up to 7% lactic acid; or up to 4% acetic acid (40 grain vinegar) prior to stuffing, or the casings may be sprayed with such solutions immediately after stuffing. Care must be taken to assure that soaked or sprayed casings are thoroughly drained to remove excess moisture.

(c) Water, wine

When water is used as a solvent for curing ingredients and so added to gain a more even distribution, or when wine is added as a flavoring to certain kinds of sausage processed under limitations prescribed in the regulations (MR-318), it is permissible to add not more than approximately 1/4 of 1 percent of water or 1 percent of wine to sausage of the type that is treated for destruction of possible live trichinae by any one of the methods prescribed in regulations (MR-318). When used, such ingredients should be shown in the ingredients statement in order of their percentage content.

CURING AND SMOKING

Subpart 18-F

(Regs: M-318; P-Subpart 0)

18.28 CURING

Curing may be done by injecting and/or holding product in cure solutions containing water, salt, and other approved ingredients.

18.29 TRICHINAE CONTROL; EXEMPTION

For trichinae control, pork muscle tissue must be treated as required by regulations (M-318).

(a) Cured, Unsmoked, Product

Cured, unsmoked, and uncooked boneless pork cuts, packaged in consumer-size packages, need not be treated for trichinae. They shall be limited to 10 percent added substance.

(b) Scotch Style Ham

Cured, boned, unsmoked, rolled ham is sometimes known as "scotch style." Home cooking is customary. Therefore, trichinae treatment is not required.

(c) Hams for Armed Forces

Smoked hams purchased by the Armed Forces need not be treated for trichinae when so requested. However, they must not be diverted into trade channels unless treated by a method prescribed in the regulations.

(d) Tropic Cure Ham

Tropic cure hams for export commercially when labeled "tropic cure smoked ham" must have a water-protein ratio not in excess of 3.25 to 1 and a salt content of 6 percent. These hams need not be treated for trichinae.



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